

(a) a first set of electrodes [19; first positioning means coupled to said set of electrodes for spacing a portion of said set of electrodes, defined as a first subset of electrodes, apart from and] defining an electrode array sized such that a substantial number of said electrodes are not in contact with the patient's heart, the first electrode array defining a substantially spherical shaped space [(12)]; and

(b) a second [positioning means coupled to said] set of electrodes [for placing a second predetermined subset of] displaced from said first set of electrodes [(24) into] which are located in contact with [a surface of] said patient's heart [; third positioning means coupled to said set of electrodes for placing a third predetermined subset of said electrodes (26) into a position in a wall of said patient's heart].

4. (Amended) The catheter assembly [apparatus] of claim 3 wherein said first set of electrodes exceeds twelve electrodes.

5. (Amended) The catheter assembly [apparatus] of claim 3 wherein said first set [subset] of electrodes exceeds one.

6. (Amended) The catheter assembly [apparatus] of claim 3 wherein said second set of electrodes [subset] is at least one.

7. (Amended) The catheter assembly [apparatus] of claim 9 [3] wherein said first positioning means is substantially spherical in shape.

8. (Amended) The catheter assembly [apparatus] of claim 9 [3] wherein said second positioning means is [has a] substantially cylindrical in shape.

9. (Amended) *a/cont* The [A] catheter assembly [(10) for] of claim 3 operatively configured as a mapping [the interior of a] catheter for use in mapping cardiac electrical potentials of said patient's heart, the catheter assembly further comprising: (c) a first [set of] positioning means coupled to said electrode [sites defining a first substantially spherical electrode array (18); said electrode] array [(19) sized such that a substantial number of said electrodes are] adapted for spacing said electrode array apart from and not in contact with a surface of the patient's heart[;], (d) a second positioning means coupled to said second set of [electrode sites (24) displaced from said electrode array, located in contact with] electrodes adapted for placing said second set of electrodes into contact with a surface of said patient's heart, and a third positioning means coupled to a third set of electrodes adapted for placing a third predetermined subset of said electrodes into a position in a wall of said patient's heart.

10. (Amended) [A] The catheter assembly [(10) for] of claim 3  
operatively configured as a mapping catheter for use in  
mapping [the] electrical potentials of [the interior ] a  
heart chamber interior of [a] said patient's heart, the  
catheter assembly further comprising: a flexible lead body  
[(72)], connected to a deformable lead body [(74)], said  
flexible lead body and said deformable lead body having a  
lumen[;] formed therethrough, said deformable lead body  
being deformable to a first collapsed position wherein said  
deformable lead body has a substantially cylindrical shape  
[and], said deformable lead body further being deformable to  
a second expanded position wherein said deformable lead body  
has a substantially spherical shape[; an electrode array  
(19) having a plurality of electrode sites], the first set  
of electrodes being located on said deformable lead body,  
[wherein said electrode sites form a spherical array of  
electrode sites when said deformable lead body is in said  
second expanded position;] and the second set of electrodes  
being located on a tip of a reference catheter [(16) having  
a tip electrode assembly; said reference catheter (16) being  
located in] within said lumen and supported for relative  
motion with respect to said first set of electrodes  
[electrode array] such that said second set of electrodes  
[tip electrode assembly] may be placed into contact with  
said patient's heart when said first set of electrodes  
[array] is in said heart chamber.

11. (Amended) The catheter assembly [(10)] of claim 10 further  
comprising[:] means for excluding blood [(77)] from an [the]  
interior portion of said deformable lead body when said  
deformable lead body is in said second expanded position.